इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 3916 (1966): Code of practice for pig housing [FAD 5: Livestock Feeds, Equipment and Systems]

“ज्ञान से एक नये भारत का निर्माण”
Satyanarayan Gangaram Pitroda
“Invent a New India Using Knowledge”

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”
Bhartṛhari—Nītiśatakam
“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA JURIS NON EXCUSAT

PROTECTED BY COPYRIGHT

IS : 3916 - 1966

(Reaffirmed 2000)

Indian Standard

CODE OF PRACTICE FOR PIG HOUSING

UDC 636·4·083·1 : 728·945

© *Copyright* 1967 *by*

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 1

Gr 5

Price Rs 4·00

March 1967

Indian Standard
CODE OF PRACTICE FOR PIG HOUSING

Livestock Housing Sectional Committee, AFDC 17

Chairman	*Representing*
Dr P. Bhattacharya	Ministry of Food, Agriculture, Community Development & Co-operation (Department of Agriculture)
Members	
Dr G. C. Juneja (*Alternate* to Dr P. Bhattacharya)	
Shri J. P. J. Bilimoria	Central Public Works Department
Shri H. M. Dalaya	Kaira District Co-operative Milk Producers' Union Ltd, Anand
Dr M. K. Shah (*Alternate*)	
Shri Raje J. R. Deshmukh	In personal capacity (*Raver, East Khandesh*)
Director	Directorate of Animal Husbandry, Government of Madras
Deputy Director of Animal Husbandry (Livestock) (*Alternate*)	
Director	Directorate of Animal Husbandry, Government of Uttar Pradesh
Assistant Director (P) (*Alternate*)	
Dr Gian Singh	Indian Agricultural Research Institute, New Delhi
Lt-Col G. S. Grewal	Directorate of Remounts and Veterinary Services, Quartermaster General's Branch, Army Headquarters
Maj V. K. Bhatnagar (*Alternate*)	
Shri V. N. Kak	In personal capacity (*Vasundhara, Jaipur*)
Shri V. S. Kamat	Hindustan Construction Co Ltd, Bombay
Shri H. D. Nargolwala	Ministry of Works & Housing
Shri K. N. Velankar (*Alternate*)	
Dr S. N. Ray	National Dairy Research Institute, Karnal
Shri T. Narayanaswamy (*Alternate*)	
Shri M. M. A. Rehman	Directorate of Animal Husbandry and Veterinary, Government of Maharashtra
Dr P. D. Lele (*Alternate*)	

(*Continued on page* 2)

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 1

(*Continued from page* 1)

Members	*Representing*
LT-COL A. S. SANGWAN	Directorate of Military Farms, Army Headquarters
SHRI SHAHID ALI (*Alternate*)	
SHRI SATWANT SINGH	In personal capacity (*Nasirpur Farm, Patiala*)
DR C. M. SINGH	Indian Veterinary Research Institute, Izatnagar
DR S. S. PRABHU (*Alternate*)	
DR HARI BHAGWAN, Deputy Director (Agri & Food)	Director General, ISI (*Ex-officio Member*)

Secretary

SHRI E. N. SUNDAR
Deputy Director (Agri & Food), ISI

Associate Secretary

SHRI L. RAMACHANDRA RAO
Assistant Director (Civ Engg), ISI

Pig Housing Subcommittee, AFDC 17 : 4

Convener	
DR S. BHATTACHARYA	Directorate of Animal Husbandry, Government of West Bengal
Members	
GENERAL MANAGER, REGIONAL PIG BREEDING STATION-CUM-BACON FACTORY	Central Dairy Farm, Aligarh
SHRI R. H. PASTAKIA	Works and Buildings Department, Government of West Bengal
SHRI K. S. SURI	Forests Department, Government of Punjab

Indian Standard

CODE OF PRACTICE FOR PIG HOUSING

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 23 December 1966, after the draft finalized by the Livestock Housing Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 There are, at present, about 5 million swine in the country, but only a very negligible portion of the present stock is run on scientific principles in well organized farms. The vast majority of the swine population is in the hands of those who are ignorant about the industry with the result that, pig-keeping in the country, instead of becoming a profitable business often becomes a liability. Proper attention towards pig-keeping should, therefore, be considered essential not only for improving the conditions of the stock and their efficient management, but also to provide them with proper housing facilities so that the pig industry would be placed on a proper scientific and economic footing.

0.2.1 Experiments carried out by workers interested in the development of piggeries all over the world have shown that housing of pigs in proper structures is essential. In view of the extremely variable climatic conditions prevailing in different parts of the country, provision of suitable standards for housing of pigs is of great importance. The housing should also provide proper hygienic conditions required to maintain the healthy growth of these animals.

0.2.2 Housing of pigs is dependent upon the system of farming, which may vary according to the prevailing conditions of the locality and also on the financial resources of the farmer. Moreover, with the existing heavy pressure on land for production of food crops and also in view of ever-increasing population, it is considered desirable that the system of pig farming should be so adapted as to minimize the pressure on land. The system may be indoor, semi-indoor or extensive.

0.2.3 In India there are divergent soil and climatic conditions in different regions. The design and layout of the pig house will, therefore, vary. Similarly, materials for construction and fittings would also vary according to means, availability and suitability under local condition.

0.3 Keeping the above factors in view, an attempt has been made in this code to specify dimensions of various structures of pig housing so as to serve general purpose in different regions of the country. However, it may be necessary to modify the structural designs under an available expert opinion suiting local conditions, especially in those places, where extreme climatic conditions prevail.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This code deals with the constructional details of structures required for housing of pigs.

2. TERMINOLOGY

2.0 For the purpose of this code, the following definitions shall apply.

2.1 Boar — An uncastrated male pig.

2.2 Sow — A female pig that has farrowed at least once.

2.3 Gilt — A female pig which has not farrowed.

2.4 Litter — A group of piglets born to a sow.

2.5 Piglet — A young pig before weaning.

2.6 Weaners — Piglets which have been separated from the mother for the purpose of independent rearing.

2.7 Sty — A dwelling place consisting of one or more of pens (*see* **2.7.1**) for pigs.

2.7.1 *Pen* — A part of the sty for housing a single or group of pigs having a covered place and an adjoining open yard; the covered place providing feeding and watering troughs and dunging spaces.

2.8 Dry Sow and Gilt Sty — A dwelling place for dry sows and gilts.

2.9 Farrowing Sty — A dwelling place for nursing sows and their litters.

2.10 Fattening Sty — A dwelling place for young pigs kept for fattening purpose.

2.11 Sick Sty — A dwelling place for sick pigs particularly meant to be segregated from healthy stock.

---

*Rules for rounding off numerical values (*revised*).

2.12 Stud Boar Sty — A dwelling place for breeding boars.

3. LAYOUT

3.1 The general layout of the piggery having its different units may be as given in Fig. 1.

4. LOCATION

4.1 The structures shall be located on a fairly raised and well-drained site, not liable to flooding. The ground shall not be clayey or slushy.

4.2 The structures shall be at least 15 m away from dwelling and factories; 30 m away from dairies, animal and poultry houses and foodgrain storage structures; 45 m away from fire sources and 1 km away from garbage dumping grounds, slaughter houses, hide curing centres and tanneries.

4.3 The boundaries of the site shall be at least 50 m away from the nearest transit roads and shall be surrounded by a fence. In locating buildings and structures; on the site suitable space shall be left for sanitary purpose.

4.4 The site shall be so selected where adequate water supply is assured.

4.5 The structures shall be so located and oriented as to avoid heavy draughts but at the same time it shall have plenty of sunlight and circulation of fresh air.

5. SPACE REQUIREMENTS

5.1 Covered Floor Area Requirement — The covered floor area recommended and typical dimensions adopted in general for each animal shall be as given in Table 1.

TABLE 1 COVERED FLOOR AREA REQUIREMENT PER ANIMAL

Sl No. (1)	Type of Animal (2)	Covered Floor Area per Animal m^2 (3)	Typical Dimensions m (4)
i)	Boar	6·25 to 7·50	2·5 × 2·5 to 2·5 × 3·0
ii)	Farrowing sow	7·50 ,, 9·00	2·5 × 3·0 ,, 3·0 × 3·0
iii)	Weaner/fattening pig	0·96 ,, 1·80	0·8 × 1·2 ,, 1·2 × 1·5
iv)	Dry sow or gilt	1·80 ,, 2·70	1·2 × 1·5 ,, 1·8 × 1·5

5.2 Open Yard Area Requirement — The open yard area recommended for each animal shall be as given in Table 2. The open yard area for the particular type of animal shall be adjacent to its sty.

TABLE 2 OPEN YARD AREA REQUIREMENT PER ANIMAL

SL No.	TYPE OF ANIMAL	OPEN YARD AREA PER ANIMAL m²
(1)	(2)	(3)
i)	Boar	8·8 to 12·0
ii)	Farrowing sow	,, ,, ,,
iii)	Weaner/fattening pig	,, ,, ,,
iv)	Dry sow or gilt	1·4 to 1·8

5.3 Feeding and Watering Trough Area Requirement — The trough length required per animal for feeding and watering purposes shall be as given in Table 3. In all cases the width of the trough shall not be less than 50 cm.

NOTE — The requirement of water for the animals would vary according to the prevailing climatic conditions, type of feed used and the age of the animals. According to the existing practical experience, the quantity of water required per animal per day is about 22 litres.

TABLE 3 FEEDING AND WATERING TROUGH LENGTH REQUIRED PER ANIMAL

SL No.	TYPE OF ANIMAL	LENGTH cm
(1)	(2)	(3)
i)	Boar	60 to 75
ii)	Sow and litter	75 ,, 100
iii)	Fattening pig	30 ,, 40
iv)	Weaner	20 ,, 30

6. STIES

6.0 The animals shall be kept in sties (*see* **2.7**) which shall be divided into one or more pens (**2.7.1**). Each pen may have a single animal or a group of animals depending upon the age, sex and purpose. The number and dimensions of pens shall depend upon the number of animals to be kept and the floor area (*see* **5.1**) specified per animal. In the case of extensive system of pig-keeping, where the pigs are in pasture, the pens and sties shall be constructed separately to provide them shelter.

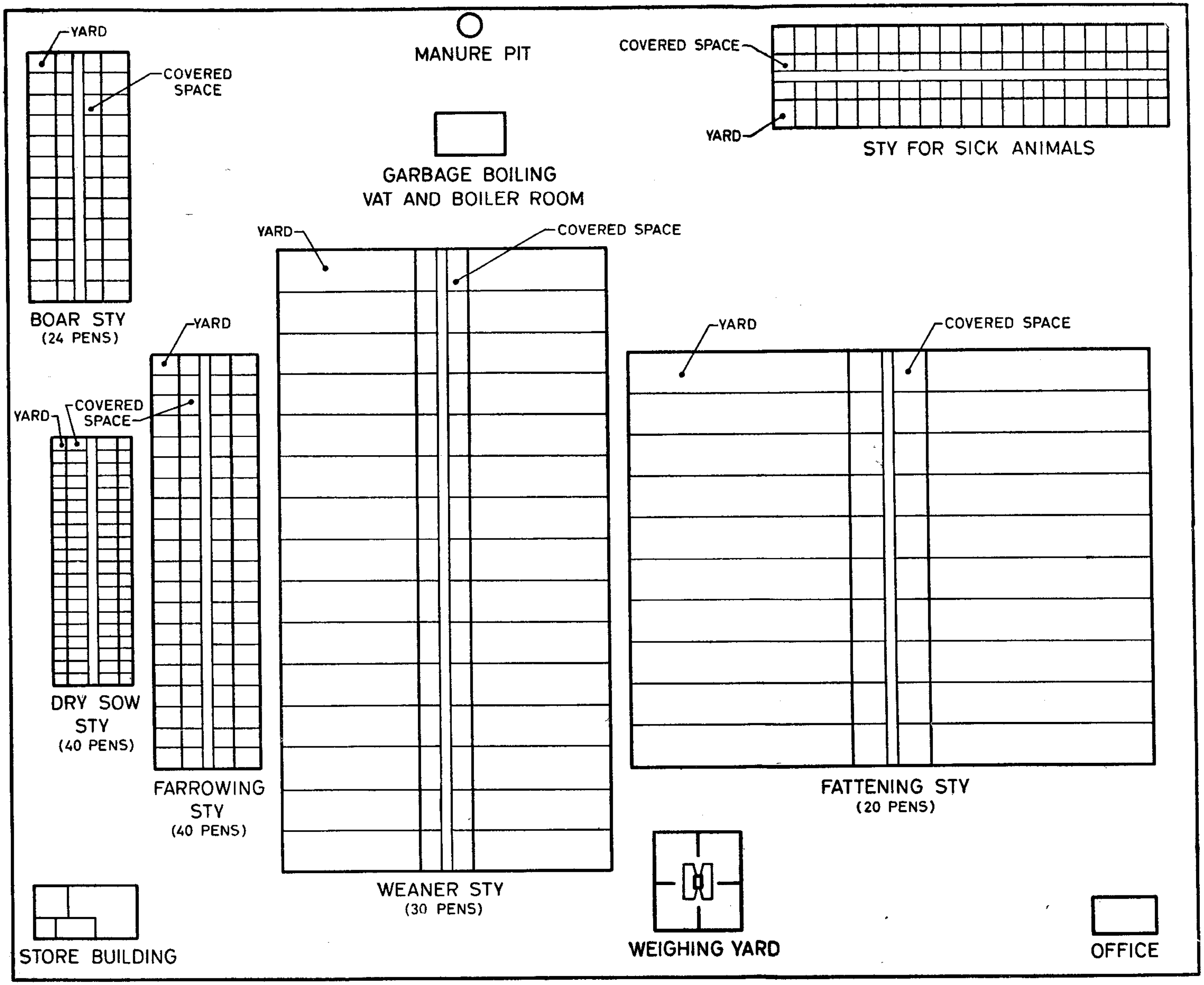


FIG. 1 TYPICAL LAYOUT PLAN OF A PIGGERY UNIT

As in the Original Standard, this Page is Intentionally Left Blank

6.1 In large scale commercial piggeries having large number of animals for the convenience of better management there may be different types of sties as indicated below for housing different types of animals. For small scale operations instead of providing different sties the animals may be housed under the same roof with provision of separate pens for the purpose. Such sties are:

a) Boar sty,
b) Dry sow and gilt sty,
c) Farrowing sty,
d) Fattening sty, and
e) Sick sty.

6.1.1 *Boar Sty* — Each boar sty shall normally have not more than 24 pens under one roof and each pen shall accommodate not more than one animal.

6.1.2 *Dry Sow and Gilt Sty* — Each sty shall normally have not more than 40 pens under one roof and these pens shall be arranged in two rows. Each pen shall accommodate two, five or ten animals depending upon the stage of pregnancy.

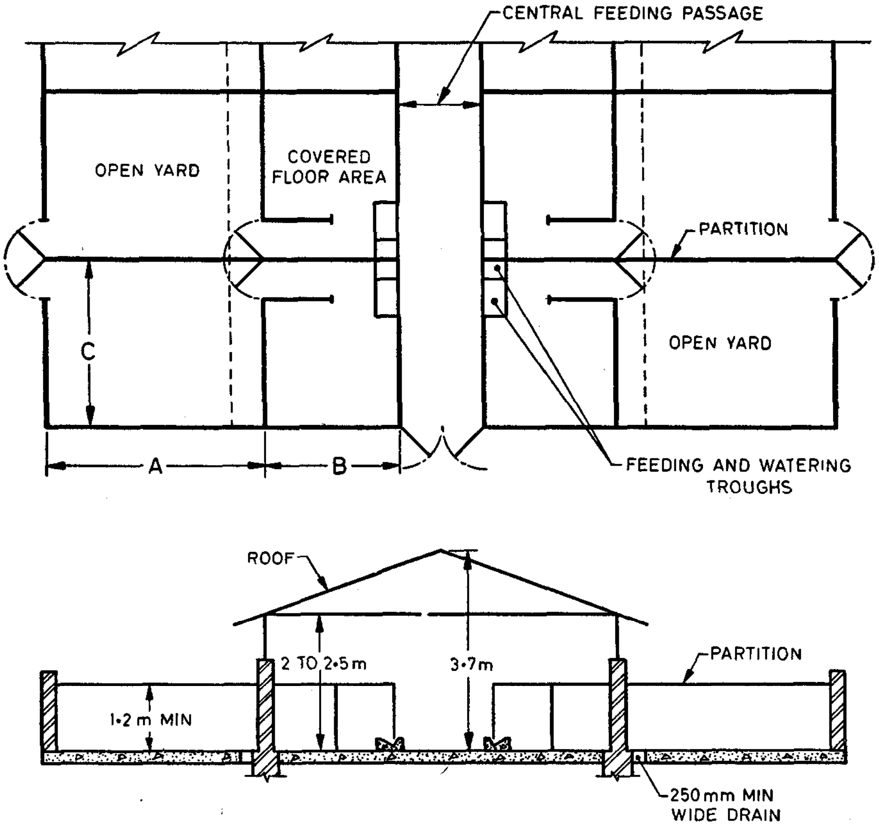
6.1.3 *Farrowing or Nursing Sow Sty* — Each farrowing sty shall normally contain not more than 40 pens under one roof and each pen shall accommodate not more than one animal with the litter.

6.1.4 *Fattening Sty* — Each fattening sty shall normally have not more than 20 pens under one roof and each pen may have 16 to 32 animals kept for fattening purpose.

6.1.5 *Sty for Weaner Piglets* — Each sty shall normally have not more than 30 pens under one roof. Each pen may accommodate 10 to 20 animals of age ranging between two and six months.

6.1.6 *Sty for Sick Animals* — The number of pens under this sty shall depend upon the number of animals kept in farm. Normally a minimum accommodation for 5 percent of the stock shall be provided for housing the sick animals. This sty shall be situated at a reasonable distance from the other sties to have an effective segregation from healthy animals. The construction and internal planning (*see* **6.2**) of the sty shall be the same as for the other sties. Provisions for feeding and watering shall be made in the sty itself.

6.2 The internal details, such as for sleeping quarter, dunging area feeding passage, feeding and watering troughs in the sties meant for keeping boars, dry sows, weaners and fatteners are given in Fig. 2.



All dimensions in metres.

TYPE OF ANIMAL	*A*	*B*	*C*
Boar	4	2·5	3
Dry Sows	2	3	1·8
Fatteners	32	4·8	6
Weaners	20	3	6

FIG. 2 DETAILS OF BOAR, DRY SOW, FATTENING AND WEANER STY

6.2.1 *Internal Details of Farrowing Sty* — The farrowing sty shall be so designed as to provide sufficient room for the nursing sow to sleep and for the piglets to move. Along the walls, compartments for piglets shall be provided in one or two rows. Each such compartment shall measure 2·5 × 0·75 × 1·2 m high (*see* Fig. 3). An opening of 300 × 225 mm shall be provided in each compartment facing the nursing sow. Watering and feeding troughs shall be provided in each compartment. Guard rails shall be provided 25 cm above the floor level.

Note — The idea to have these compartments is to keep the piglets as far as possible away from the nursing sow so as to avoid the possible crushing of the young ones by the movement of the mother.

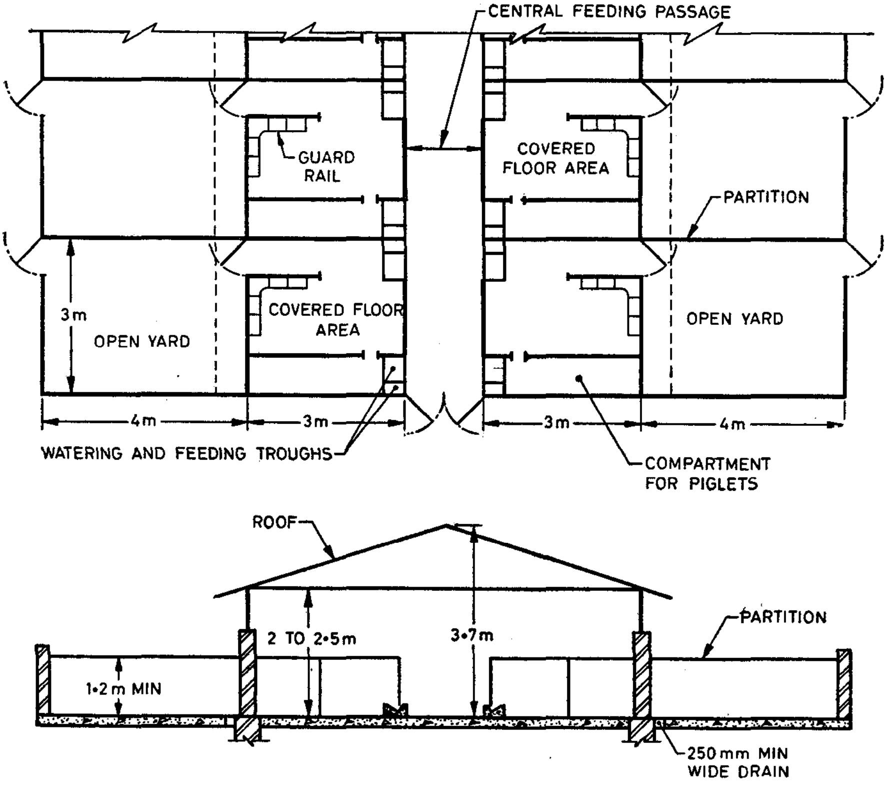


Fig. 3 Details of a Farrowing Sty

7. CONSTRUCTIONAL DETAILS OF STIES

7.1 Floor — The floor shall be hard and warm, impervious to water and easy to clean. The floor may be of cement concrete (*see* IS : 2571-1963*) or paved with cement concrete flooring tiles (*see* IS : 1443-1959†), stone slabs or bricks (*see* IS : 1077-1957‡) and set in cement mortar (*see* IS : 2250-1965§) or lime mortar (*see* IS : 1625-1962‖). Wherever necessary the flooring may be suitably insulated. If the floor is made of stone slabs or bricks, the joints shall be filled in properly with the binding material. The surface of the floor shall be suitably patterned to give a rough surface. This floor shall slope towards the drains (*see* **7.6**). The details of construction shall vary from place to place depending on the climatic conditions and shall be constructed on the recommendation of the local housing experts.

7.2 The height of walls shall be 2 to 2·5 m from the floor level. Ventilators (*see* **7.5**) at suitable intervals shall be provided on the long sides of the walls. Alternatively, the walls up to two-thirds of the height may be built of bricks with cement mortar or lime mortar and the remaining portion of the wall may be made with the help of series of wooden rafters; each such rafter measuring at least 25 × 40 mm. The clearance between two adjacent rafters shall be not more than 350 mm. These rafters shall be supported by 40 × 40 mm angle iron placed at the intervals of 3 m. The open space may be covered with wire netting.

7.3 Roof — The roof may be of RCC flat type or gabled. In the case of the gabled roof, materials for roofing may be asbestos cement sheets (*see* IS : 459-1962 ¶), corrugated galvanized steel sheets (*see* IS : 277-1962**) or clay tiles (*see* IS : 654-1962††). The roofing shall be laid in accordance with the recommendations given in the relevant Indian Standards [*see* IS : 3007 (Part I)-1964‡‡ and IS : 2858-1964§§]. In the regions of extreme climatic conditions the roof may be insulated either by providing a layer of thatching or ceiling in order to reduce the severity of heat inside the sty.

---

*Code of practice for laying *in situ* cement concrete flooring.

†Code of practice for laying and finishing of cement concrete flooring tiles.

‡Common burnt clay building brick.

§Code of practice for preparation and use of masonry mortars.

‖Code of practice for preparation and use of lime mortar in buildings.

¶Specification for unreinforced corrugated asbestos cement sheets (*revised*).

**Specification for galvanized steel sheets (plain and corrugated) (*revised*).

††Specification for clay roofing tiles, Mangalore pattern (*revised*).

‡‡Code of practice for laying of asbestos cement sheets: Part I Corrugated sheets.

§§Code of practice for roofing with Mangalore tiles.

7.4 Doors — The number of doors provided in each sty shall depend upon its dimensions. The doors shall be strong and so fitted that it is close to the floor level. The door leaves may be made of either galvanized steel sheets or wood. The door frame may be made of angle irons. The width of the door of individual pen may range between 0·75 to 1 m while the doors of a sty may range between 1·2 to 1·5 m and the height 1·2 to 2 m.

7.5 Ventilators — The ventilators shall be provided if the sties are closed on the sides. The number of ventilators to be provided shall depend upon the dimensions of the sty. Each ventilator shall be 0·6 m high and 1 m long. The top of each ventilator shall be 0·5 m from the highest point of the wall. Each ventilator shall be covered from outside by wire netting.

7.6 Drainage — Each sty shall be provided with at least one drain on one side of the sty for proper drainage. The drain shall have a minimum width of 250 mm and a slope of 25 mm in every 10 metres.

8. SUBSIDIARY ITEMS

8.1 Over and above the general means of housing the pigs described above a big commercial or research piggery may require few subsidiary buildings like weighing yard, store building, loading and unloading ramp, skim milk tanks, manure pit, garbage boiling vat, boiler room and wallowing tank.

8.1.1 *Weighing Yard* — The specification for the weighing yard may vary from one place to the other. A weighing shed shall be provided wherein a weighing scale shall be fitted to record the weights of the animals regularly. The details of the weighing yard are given in Fig. 4.

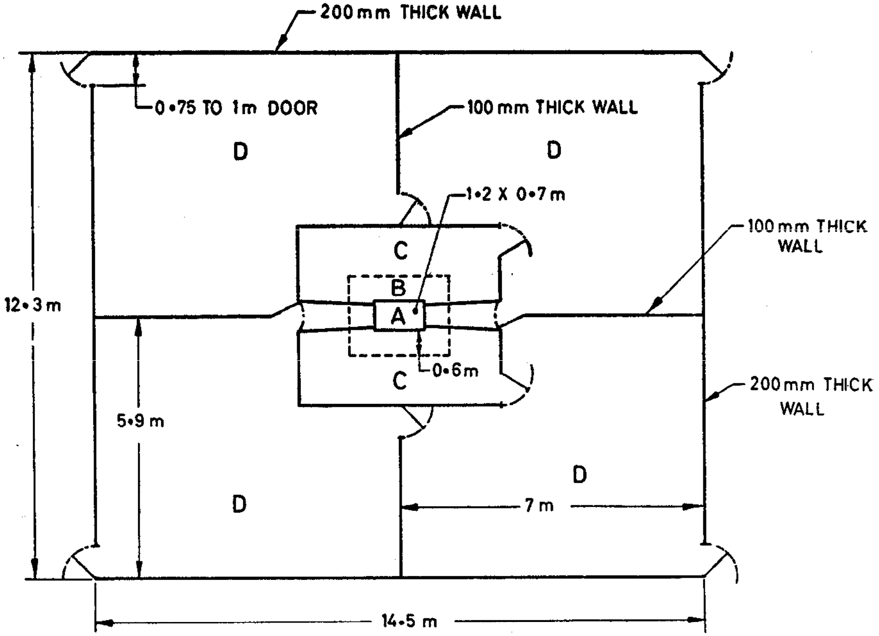
8.1.2 *Store Building* — The store building may have a store-keeper's office, a mixing room to mix the feed of the animals, a room for keeping miscellaneous items, such as farm equipment and tools and a feed store (*see* **8.1.2.1**) meant for bulk storage of feed in bags. The general plan of the store-building is shown in Fig. 5 (*see* P 15).

8.1.2.1 *Feed store* — The size of the feed room shall vary according to the number of animals kept. The space required for the feed room in a farm may be calculated as given below but at the same time some provision shall be made for some scope for increased storage and the passage to move about in the store:

$$\text{Space required} = \frac{X \times Y \times Z}{B} \times \frac{1}{N} \text{ units}$$

where

X = Number of bags in stack,
Y = Average feed consumption per day in kg,
Z = Number of days the feed has to be stored,
B = Capacity of each bag in kg, and
N = Number of bags to be stacked one over the other.



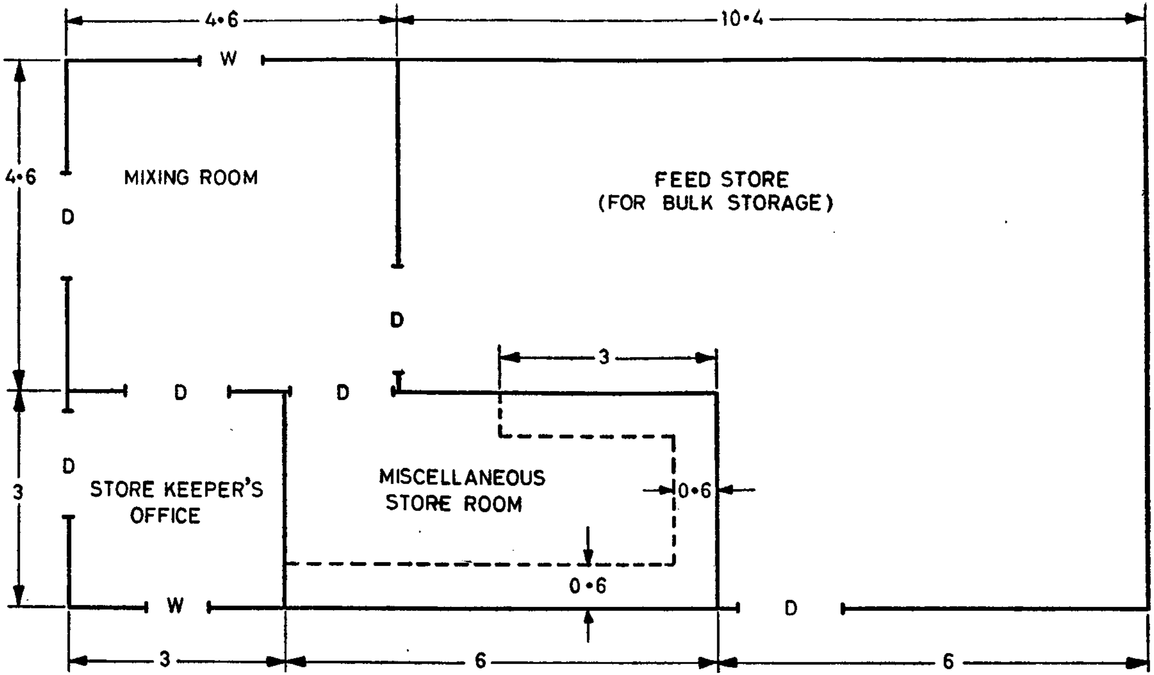
A	Weighing platform	*C*	Weighing room
B	Weighing machine	*D*	Holding pen

FIG. 4 LAYOUT PLAN OF WEIGHING YARD

8.1.3 *Loading and Unloading Ramp* — The farm shall have a permanent loading and unloading ramp. The general construction of the ramp may be as given in Fig. 6 (*see* P 16).

8.1.4 *Skim Milk Tank* — The farms utilizing skim milk as a source of feed shall have provision to store skim milk in a tank with a few small distribution tanks. This may be either of permanent or portable type. The size of the tank shall depend on the quantity required to feed the animals for two days.

8.1.5 *Manure Pit* — The manure pits shall be constructed at a distance of not less than 15 m from the farthest end of the sties and shall be so constructed that the manure can be utilized for cultivation purpose. The manure pit for this purpose shall be located at a strategic point in the piggery. As regards the liquid manure, including urine and washings, a suitable provision shall be made for its disposal for irrigating the cultivated areas through gravitation.



D 1·5 m Wide door

W 0·9 m Wide window

All dimensions in metres.

FIG. 5 PLAN OF STORE BUILDING

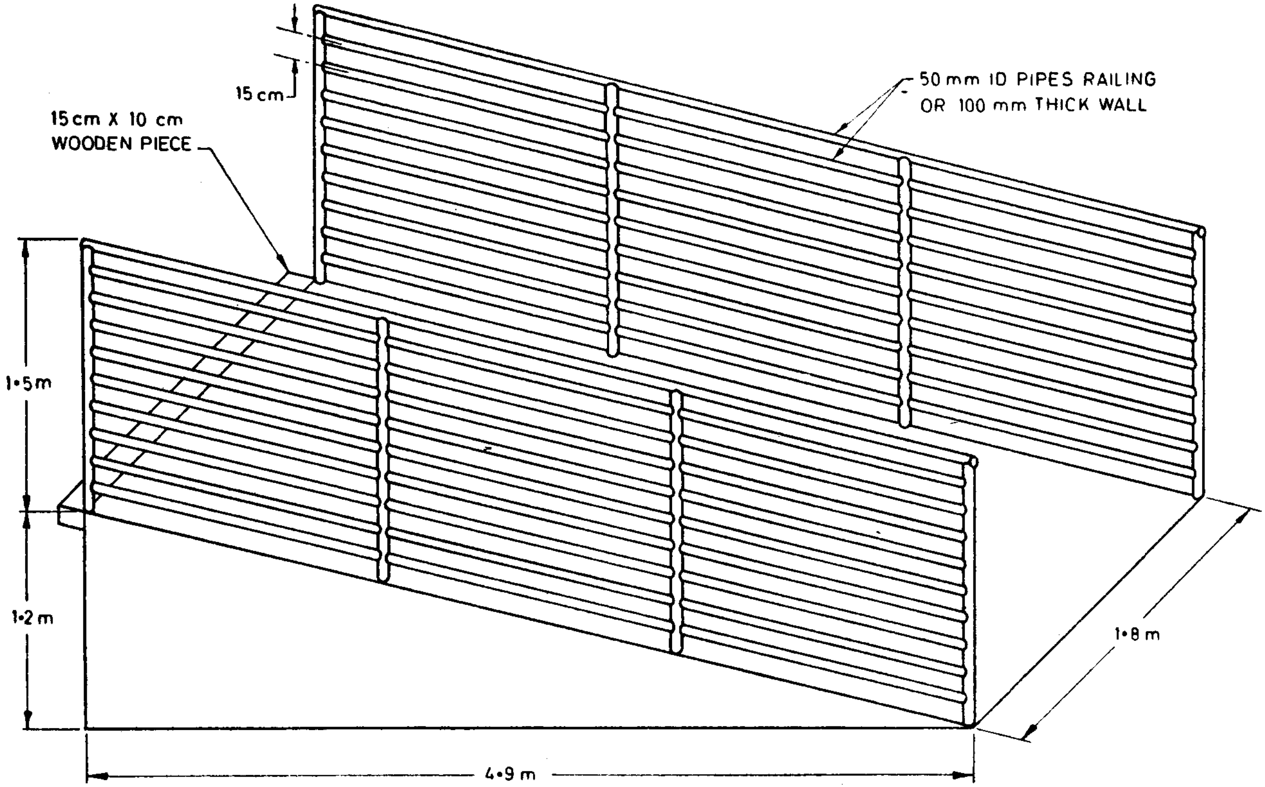


FIG. 6 LOADING AND UNLOADING RAMP FOR PIGS

8.1.6 *Garbage Boiling Vat and Boiler Room* — A shed or room shall be constructed for boiling the garbage either in big vessels or in jacketed vats. The boiling may be done with fire or with steam generator from a boiler.

8.1.7 *Wallowing Tank* — Wallowing tanks may be provided in pig breeding farms situated in hot zones. The wallowing tank may be made of cement concrete the dimensions of which shall not be less than 2·5 × 1·2 × 0·15 m. Alternatively, overhead sprinkles or showers may be provided in order to keep the animals cool during summer.

INDIAN STANDARDS INSTITUTION

The Indian Standards Institution (ISI), which started functioning in 1947, is the national standards organization for India. Its principal object is to prepare standards on national and international basis and promote their general adoption.

The overall control of ISI, which is run and financed jointly as a non-profit making body by the Government and private enterprise, is exercised by the General Council, composed of representatives of Central and State Governments; leading trade, scientific and technological organizations; and subscribing members. The Union Minister of Industry is the ex-officio President of ISI.

The present technical activity of ISI is carried out through 8 Division Councils for Agricultural and Food Products; Chemical; Civil Engineering; Consumer Products; Electrotechnical; Mechanical Engineering; Structural and Metals; and Textile. All technical work relating to the formulation and revision of standards is done by committees appointed by and under the direction of their respective Division Councils. These committees consist of experts drawn from manufacturing units, technical institutions, purchase organizations and other concerned bodies.

To make available benefits of Indian Standards to the common man, ISI has introduced its Certification Marks Scheme under the *Indian Standards Institution (Certification Marks) Act, 1952*, as amended by the *Amendment Act, 1961*. According to this Act, quality goods conforming to Indian Standards can carry the ISI Certification Mark. This Mark is a third-party guarantee of quality of marked goods. Licences to use the ISI Certification Mark are granted to manufacturers using reliable methods of quality control subject to overall inspection by ISI.

In the international field, ISI represents India on the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). ISO and IEC respectively link 54 and 40 countries, and function through 118 and 58 technical committees; ISI participates in 83 technical committees of ISO and all the technical committees of IEC. The committees and subcommittees of IEC and ISO for which ISI holds the secretariat deal with: Electric Fans, Lac, Mica, Pictorial Markings for Handling of Goods, Liquid Flow Measurements in Open Channels, Procedures for Interconversion of Values, Spices and Condiments, and Stimulants.

PUBLICATIONS OF INDIAN STANDARDS INSTITUTION

INDIAN STANDARDS

Over 3 500 Indian Standards, broadly classified under the following main heads, have been issued so far:

Agriculture & Food
Chemical
Civil Engineering
Consumer Products
Electrotechnical
Mechanical Engineering
Structural & Metals
Textile

Of these, the standards belonging to the Agriculture & Food Group fall under the following categories:

Animal Feeds
Baking Aids
Bee-Keeping Equipment
Beverages
Biscuits and Confectionery
Cereal and Pulses Products
Cocoa Products
Coffee Products
Dairy Equipment
Dairy Industry, Methods of Test
Dairy Laboratory Apparatus
Dairy Products
Edible Starch and Starchy Products
Farm Implements and Machinery
Fish and Fishery Products
Food Colours
Food Grain Handling and Storage
Fruits and Vegetables
Honey and By-Products
Infant Foods
Livestock Housing
Meat and Meat Products
Pest Control Equipment
Pesticidal Formulations
Pesticides
Propagation Materials
Regulated Market Yards
Spices and Condiments
Starch Derived Products
Sugar and By-Products
Tobacco Products
Transport of Live Animals

OTHER PUBLICATIONS

	Rs
ISI Bulletin (Published Every Month)	
Single Copy	2·00
Annual Subscription	15·00
Annual Reports (from 1948-49 Onwards)	2·00 to 3·00 each
Handbook of ISI Publications, 1966	5·00

Available from

INDIAN STANDARDS INSTITUTION

Headquarters

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 1

Telephones 27 36 11 - 20 **Telegrams Manaksanstha**

Branch Offices

Telegrams Manaksanstha

534 Sardar Vallabhbhai Patel Road	**Bombay 7**	**Telephone**	**35 70 27**
5 Chowringhee Approach	**Calcutta 13**	**,,**	**23-18 23**
117/418 B Sarvodaya Nagar	**Kanpur**	**,,**	**3 76 95**
54 General Patters Road	**Madras 2**	**,,**	**8 72 78**

Printed at Neelkamal Printers, Delhi-6, India